

IN THE CLAIMS:

Claims 1, 4, 7, 10, 12, 13, 18, and 19 have been amended herein. All of the pending claims 1 through 24 are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as amended.

Listing of Claims:

1. (Currently Amended) A semiconductor die, comprising:
a semiconductor substrate having a front side and a back side, tensile stresses, and compressive stresses;
an integrated circuit on a portion of the front side;
a passivation layer covering a portion of the integrated circuit causing a stress on at least a portion of the semiconductor substrate; and
a stress-balancing layer covering at least a portion of the back side substantially balancing the stress caused by the passivation layer covering a portion of the integrated circuit, the stress-balancing layer comprising at least one of a metal, a metal alloy, a metallorganic material, a photoresist material, a multilayer material remaining as a multilayer material having independent layers for balancing stresses in more than one direction when balancing the tensile stresses and compressive stresses of the semiconductor substrate omnidirectionally, a multilayer tape material remaining as a multilayer tape material having independent layers for balancing stresses omnidirectionally, an adhesive material having reinforcement materials therein, and a temporary adhesive material having reinforcing materials therein, and a chemical vapor deposition material.
2. (Previously Presented) The semiconductor die in accordance with claim 1, wherein the stress-balancing layer comprises one of a single component layer, a substantially homogeneous mixture of a strong material in a matrix material, a heterogeneous composite of particles of a strong material in a matrix material, and a tape with rigidity in the X-Y plane.

3. (Canceled)

4. (Currently Amended) The semiconductor die in accordance with claim 1, wherein the stress-balancing layer comprises a layer of markable material including one at least one of a UV acrylic, thio-phene material, poly-paraxylylene material, urethane material, silicone material and acrylic material for laser-marking.

5. (Previously Presented) The semiconductor die in accordance with claim 1, further comprising an adhesive layer attached to the stress-balancing layer.

6. (Previously Presented) The semiconductor die in accordance with claim 5, wherein the adhesive layer comprises a layer of material sensitive to a optical energy altering the material by at least one of heating, vaporization, burning melting, chemical reaction, residue transfer, dye transfer, and combinations thereof.

7. (Currently Amended) A nonwarp semiconductor die comprising:
a semiconductor substrate having a front side, a back side, a low ratio of height to a horizontal dimension, tensile stresses, and compressive stresses;
an integrated circuit on the front side;
a passivation layer covering a portion of the integrated circuit exerting a stress on the front side;
and
a stress-balancing layer covering at least a portion of the back side, the stress-balancing layer for balancing a portion of the front side stress with a generally equivalent back side stress, the stress-balancing layer comprising at least one of a metal, a metal alloy, a metallorganic material, a photoresist material, a multifilm layer material remaining as a multilayer material having independent layers for balancing stresses omnidirectionally when balancing the tensile and compressive stresses of the semiconductor substrate, a multilayer tape material remaining as a multilayer tape material having independent layers for balancing stresses omnidirectionally, an adhesive material having

reinforcement materials therein, and a temporary adhesive material having reinforcing materials therein, and a chemical vapor deposition material.

8. (Previously Presented) The nonwarp semiconductor die in accordance with claim 7, wherein the stress-balancing layer comprises one of a single component layer, a substantially homogeneous mixture of a strong material in a matrix material, a heterogeneous composite of particles of a strong material in a matrix material, and a tape with rigidity in the X-Y plane.

9. (Canceled)

10. (Currently Amended) The nonwarp semiconductor die in accordance with claim 7 [[9]], wherein the stress-balancing layer comprises a layer of material sensitive to a optical energy altering the material by at least one of heating, vaporization, burning melting, chemical reaction, residue transfer, dye transfer, and combinations thereof.

11. (Previously Presented) The nonwarp semiconductor die in accordance with claim 7, further comprising an adhesive layer attached to the stress-balancing layer.

12. (Currently Amended) The nonwarp semiconductor die in accordance with claim 11, wherein the adhesive layer comprises a layer of material of markable material including one at least one of a UV acrylic, thio-phene material, poly-paraxylylene material, urethane material, silicone material and acrylic material for laser-marking.

13. (Currently Amended) A semiconductor die, comprising:
a semiconductor substrate having a front side having an integrated circuit on a portion thereof, a back side, tensile stresses, and compressive stresses;
a passivation layer covering a portion of the integrated circuit causing a stress on at least a portion of the semiconductor substrate; and

a stress-balancing layer covering at least a portion of the back side substantially balancing the stress caused by the passivation layer covering a portion of the integrated circuit, the stress-balancing layer comprising at least one of a metal, a metal alloy, a metallorganic material, a photoresist material, a multilayer material remaining as a multilayer material having independent layers for balancing stresses omnidirectionally, a multilayer tape material remaining as a multilayer material having independent layers for balancing stresses omnidirectionally when balancing the tensile and compressive stresses of the semiconductor substrate, an adhesive material having reinforcement materials therein, and a temporary adhesive material having reinforcing materials therein, and a chemical vapor deposition material.

14. (Previously Presented) The semiconductor die of claim 13, wherein the stress-balancing layer comprises one of a single component layer, a substantially homogeneous mixture of a strong material in a matrix material, a heterogeneous composite of particles of a strong material in a matrix material, and a tape with rigidity in the X-Y plane.

15. (Canceled)

16. (Previously Presented) The semiconductor die of claim 13, wherein the stress-balancing layer comprises a layer sensitive to a optical energy altering the material by at least one of heating, vaporization, burning melting, chemical reaction, residue transfer, dye transfer, and combinations thereof.

17. (Previously Presented) The semiconductor die of claim 13, further comprising an adhesive layer attached to the stress-balancing layer.

18. (Currently Amended) The semiconductor die of claim 17, wherein the adhesive layer comprises a layer of material of markable material including one at least one of a UV acrylic, thio-phene material, poly-paraxylylene material, urethane material, silicone material and acrylic material for laser-marking.

19. (Currently Amended) A reduced stress semiconductor die, comprising:
a semiconductor substrate having a front side, a back side, a low ratio of the height of the semiconductor substrate to a horizontal dimension of the semiconductor substrate, tensile stresses, and compressive stresses;
an integrated circuit on the front side of the semiconductor substrate;
a passivation layer covering a portion of the integrated circuit causing a force acting on a portion of the front side; and
a force-balancing layer covering at least a portion of the back side, the force-balancing layer for balancing a portion of the force on the front side, the force-balancing layer comprising at least one of a metal, a metal alloy, a metallorganic material, a photoresist material, a multilayer material remaining as a multilayer material having independent layers for balancing stresses omnidirectionally when balancing the tensile and compressive stresses of the semiconductor substrate, a multilayer tape material remaining as a multilayer material having independent layers for balancing stresses omnidirectionally, an adhesive material having reinforcement materials therein, a temporary adhesive material having reinforcing material therein, and a chemical vapor deposition material.

20. (Previously Presented) The semiconductor die of claim 19, wherein the force-balancing layer comprises one of a single component layer, a substantially homogeneous mixture of a strong material in a matrix material, a heterogeneous composite of particles of a strong material in a matrix material, and a tape with rigidity in the X-Y plane.

21. (Canceled)

22. (Previously Presented) The semiconductor die of claim 20, wherein the stress-balancing layer comprises a layer of material sensitive to a optical energy altering the material by at least one of heating, vaporization, burning melting, chemical reaction, residue transfer, dye transfer, and combinations thereof.

23. (Previously Presented) The semiconductor die of claim 19, further comprising an adhesive layer attached to the stress-balancing layer.

24. (Previously Presented) The semiconductor die of claim 23, wherein the adhesive layer comprises a layer of material sensitive to a optical energy altering the material by at least one of heating, vaporization, burning melting, chemical reaction, residue transfer, dye transfer, and combinations thereof .